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Reconnaissance Level Characterization Plan For The T690 Cluster Trailer Removal Project

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ACRONYMS

AHA	Activity Hazard Analysis
Be	Beryllium
DOE	U. S. Department of Energy
DOP	Decommissioning Operations Plan
DQO	Data Quality Objective
EPA	U. S. Environmental Protection Agency
IWCP	Integrated Work Control Program
OSHA	Occupational Safety and Health Administration
RESI	Reservoirs Environmental Services, Inc.
RFETS	Rocky Flats Environmental Technology Site
RLC	Reconnaissance Level Characterization
RLCR	Reconnaissance Level Characterization Report
RMRS	Rocky Mountain Remediation Services, L.L.C.
RWP	Radiological Work Permit
SEG	Scientific Ecology Group
SOW	Statement of Work

1. INTRODUCTION

The Department of Energy (DOE) has established a goal of reducing the total built square footage at Rocky Flats Environmental Technology Site (RFETS) by 2% in fiscal year 1997 (FY'97). The T690 Cluster was chosen for removal as a part of the 2% reduction.-1

The T690 Cluster, as referred to through out the remainder of this document, is comprised of 15 single and multi-unit trailers and wooden shed as identified below:

T690A	16-UNITS	Divided Into Offices
T690B	5-UNITS	Divided Into Offices
T690C	SINGLE UNIT	Divided Into Offices
T690D	SINGLE UNIT	Divided Into Offices
T690E	2-UNITS	Divided Into Offices
T690F	SINGLE UNIT	Divided Into Offices
T690G	2-UNITS	Divided Into Offices
T690H	SINGLE UNIT	Divided Into Offices
T690J	SINGLE UNIT	Lab Facility
T690K	SINGLE UNIT	Lab Facility
T690L	SINGLE UNIT	Storage Area
T690M	2-UNITS	Divided Into Offices
T690N	3-UNITS	Divided Into Offices
T371G	2-UNITS	Divided Into Offices
T444A	SINGLE UNIT	Shower Facility
B663C	WOODEN SHED	Maintenance Area

The T690 Cluster Removal Project will:

- Relocate T690N and T690J,
- Demolish and remove T690A,
- Remove the remaining trailers from RFETS,
- Demolish and remove B663C, and
- Cleanup and remove material from the adjacent 662 and 663 lay down yards (see Site Map, Figure 1-1).

1.1 PURPOSE

The purpose of this characterization plan is to outline the data requirements and methodology for characterization of the T690 Cluster. The characterization effort identifies the type, quantity, condition, and location of radioactive and hazardous materials which are, or which may be, present as residual contamination in the subject facilities. The compilation of facility information contained herein, in conjunction with the T690 Cluster project files established during this investigation, brings together pertinent data from various sources to serve as a practical reference for project use during the decontamination and decommissioning efforts.

1.2 SCOPE

This document was prepared using the draft Decommissioning Protocol procedure to ensure the data quality objective (DQO) process was used in determining sampling/survey requirements. The information presented in this plan specifically pertains to the T690 Cluster; the review of historical records and the collection of process knowledge information covers the operational time period for the facility from original construction to present. The T690 Cluster was gradually installed between 1963 and 1986.

The scope of this document is to gather enough characterization information to develop the T690 Cluster Reconnaissance Level Characterization Report (RLCR).

1.3 DATA LIFE CYCLE

There are three aspects of the data life cycle that apply to the characterization process: Planning, Implementation, and Assessment. To produce a usable document (i.e., Reconnaissance Level Characterization Report) each of the three must be applied in sequence.

The planning process uses the data quality objectives (DQOs) (See section 2.1) to determine data needs, quality and survey design. This document is the initial planning phase for characterization activities.

The second phase of the characterization process is implementation. This phase includes the assessment of historical documentation concerning the operations of the facilities and any associated chemical or radiological inventory. Additionally, a physical survey is accomplished using the design as outlined during the planning phase.

The final phase of the life cycle is the assessment of information gathered during the implementation phase. The data is evaluated against the DQO criteria and a report is developed that outlines results and conclusions.

The following section is the result of the planning process for the T690 Cluster.

2.0 PLANNING

To ensure the collection of usable data it is necessary to formulate the objectives of the project. For this plan, the DQO process was used by answering questions designed to go through the seven step process for a decommissioning project. The results of this DQO process are presented in the following sections.

2.1 CHARACTERIZATION OBJECTIVES

The reconnaissance level characterization (RLC) objectives are based on questions presented in Sections 6.0 and 6.1 of the draft "Decommissioning Characterization Protocols".

This plan was developed to specify the data collection requirements necessary to provide a baseline of information for use during decommissioning activities. The information obtained by implementing this plan will be compiled into the Reconnaissance Level Characterization Report (RLCR). Ultimately, the data may be used to determine the risks to the environment and personnel during these activities (dismantling, decommissioning, etc.).

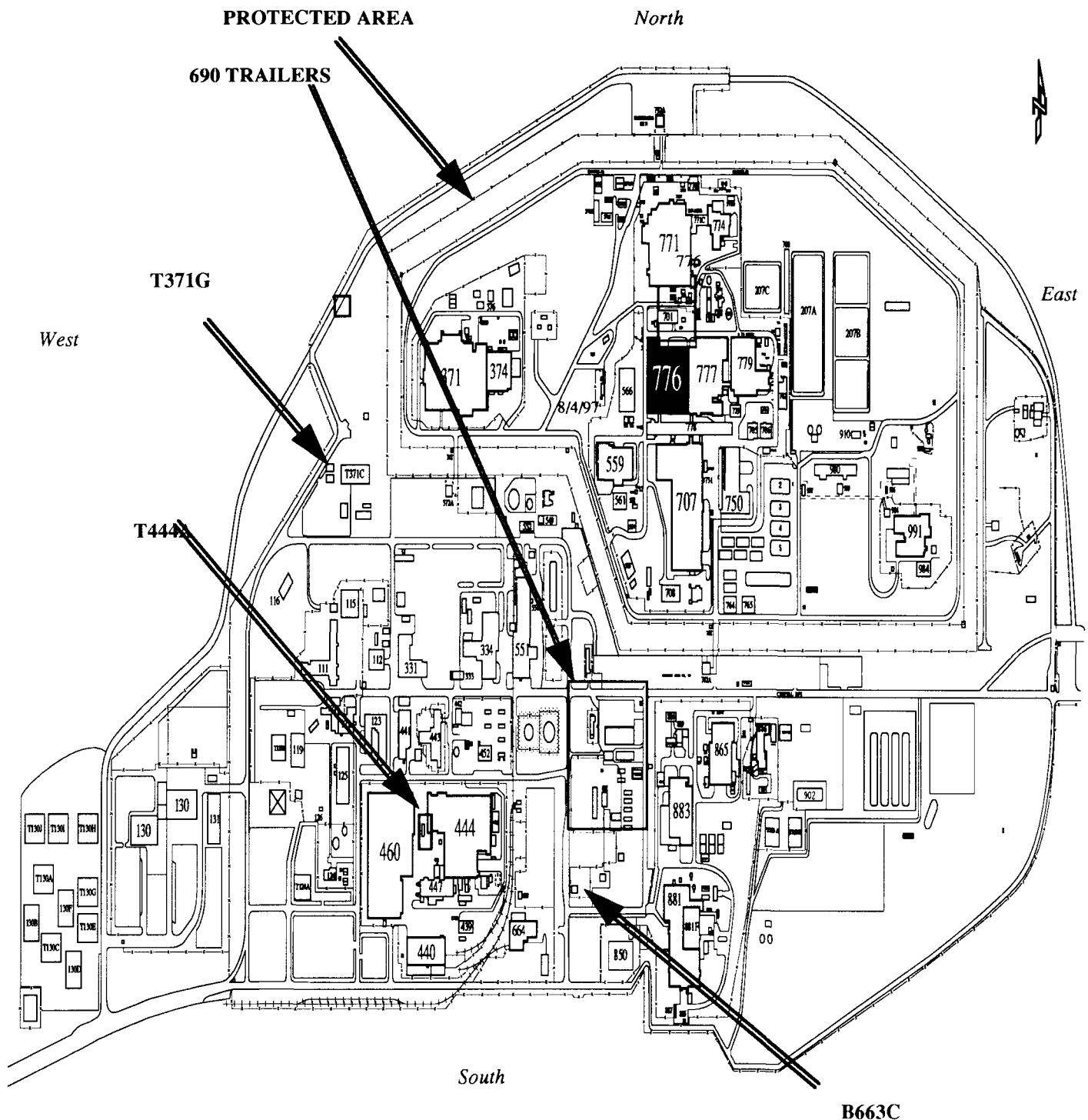
The following questions and answers were used to develop the sampling requirements for this project.

1. What is the end use of the facility or structure?

- T690A and B663C will be demolished and the debris will be put in the RFETS landfill.
- T690J and T690N trailers are to be relocated at RFETS.
- The remaining trailers will be made road worth and removed from RFETS. The removed trailers will be reused by another government agency.

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**FIGURE 1-1 SITE MAP
The 690 Trailer Cluster**



2. What types of chemical, physical/biological, or radiological hazard is being evaluated?

The following hazards were evaluated for their presence in the B690 Cluster:

- Asbestos
- PCBs
- Excess Chemicals
- Lead
- Beryllium
- Radioactive materials

3. What level of worker protection is required to perform characterization in the facility, structure or environs?

No special protective clothing will be worn to remove the trailers contents or complete radiation surveys. Safety shoes and safety glasses will be worn for all decommissioning activities. Other protective measures are identified in the job specific Radiological Work Permit (RWP) or Activity Hazard Analysis (AHA).

No unique or special protective clothing is required.

4. What type of instrumentation is required?

Radiological instrumentation is identified in Appendix B.

The other materials will be analyzed in a laboratory. The specific instrumentation is identified in the applicable lab procedures.

5. Has all facility structural data been reviewed?

All the available historical and facility information has been reviewed. A copy of this information is in the project file.

6. Have all suspect materials been identified?

Yes. Additional characterization of the suspected material is identified in this plan.

7. Are there any regulatory and statistical drivers for sampling frequency?

There are no known statistical drivers for sampling frequency for reconnaissance level information.

8. Why is this characterization information being obtained?

The reconnaissance level characterization information is being obtained to establish a baseline of hazards within the T690 Cluster. The baseline information will be summarized and presented to the DOE/RFFO in a Reconnaissance Level Characterization Report. The DOE/RFFO uses the RLCR to determine the need for a Decommissioning Operations Plan (DOP).

9. What decisions will be made from use of the data obtained for this plan?

The decision which will be made using this information is:

Is a DOP required (or not) for the T690 Cluster?

The information will also be used to identify decontamination and abatement requirements.

10. What information is required to make the decision?

A baseline of the hazards within the T690 Cluster is required. The types of hazards are identified in the answer to Question #2.

11. What is the scope of this data gathering effort?

This scope of this characterization is identified within the individual hazard discussions. (See Section 3).

12. What is the basis for the decision?

The decision to require a DOP is somewhat arbitrary. It is based on the perceived risk associated with the identified hazards. The decision is made by the DOE/RFFO.

13. What are the limits on decision errors?

This question does not apply to the reconnaissance level characterization. Since there is no specified criteria or limits on which decisions are based.

14. How will the survey design be optimized?

If the DOE/RFFO decides they do not have enough characterization information (based on their review of the RLCR), additional information will be requested.

3.0 IMPLEMENTATION

This section provides information necessary to implement the requirements of the planning (DQO) task of this project.

3.1 HISTORICAL ASSESSMENT

An examination of trailer construction materials and facility use was conducted in May 1996 and is summarized in the referenced reports. A follow-up survey was conducted to verify the accuracy of the initial survey, and to determine the need of additional sampling. As part of the examination, a comprehensive survey was conducted to determine the location and character of potentially hazardous contaminants present in the building materials.

Based on the review of available historical information and discussions with past and current residents of the T690 Cluster facilities, it was determined that minimal additional sampling and surveys are required. The sampling and survey requirements are stated in the following sections.

3.1.1 Asbestos

In May 1996, Gobbell-Hays Partners, Inc. performed an asbestos and lead inspection of the T690A trailer offices. The purpose of the survey was to prepare for the demolition and/or removal of the multi-unit trailer. A follow-up survey of all trailer units was conducted by Rocky Mountain

Remediation Services, L. L. C. (RMRS) project team members to verify the initial survey data and identify areas in need of additional sampling. All potential Asbestos Containing Materials (ACM) will be reevaluated and sampled according to guidelines established by the Asbestos Hazard Emergency Response Act (AHERA). Samples will be submitted to Reservoirs Environmental Services, Inc. (RESI) for analysis by Polarized Light Microscopy (PLM). The follow-up survey will be completed by a certified building inspector.

3.1.2 Lead Paint

Bulk paint samples collected in May 1996 were submitted to RESI for lead analysis utilizing Atomic Absorption Spectroscopy (EPA method SW846-3050A/7420). As part of a comprehensive survey of T690A, Gobbell-Hays Partners sampled interior and exterior paints for lead. The results are attached. In summary, the ceilings, window and door frames in the interior had detectable levels of lead in the paint. In addition, safety related red, yellow and grey paints contain lead at detectable levels. The skirting and siding were also found to have lead in the paint. Based on these findings, it is prudent and economical to assume that trailers B, C, D, E, F, G, H, J, K AND L have paint with detectable levels of lead since the manufacturers and landlords were the same. Trailers M and N and 371G are exempt due to later than 1981 construction dates. Trailers T444A has detectable lead in both interior and exterior paints.

3.1.3 Beryllium

Based on a review of historical data, there is no evidence that beryllium (Be) was used in the T690 Cluster. Therefore no Be sampling will required under this plan.

3.1.4 Radioactive materials

There are no areas within the T690 Cluster which are suspected to contain radioactive contamination. However, biased radiological surveys will be accomplished in accordance with characterization instructions (Appendix A).

Radiological instrumentation (portable and fixed) for making direct field measurements and laboratory analysis respectively will be utilized during characterization activities. Instrumentation which is reliable, suited to the physical conditions at the site, and capable of detecting the radiations of concern (at the required detection levels) will be chosen. Instrumentation which may be used for this project is presented in Appendix B. Additional equivalent instrumentation may be used if approved by radiological engineering.

3.1.5 Hazard Assessment

An assessment of the hazards that may be encountered during specific decommissioning activities has been performed through walkdowns and job safety analyses. This information will be incorporated into the planning process of each activity to ensure maximum protection of the worker.

3.1.6 Hazardous Waste

At this time there are no hazardous waste being stored in the facilities. Hazardous product material identified during the walk-downs will be removed prior to the start of decommissioning.

3.1.7 Polychlorinated biphenyls (PCBs)

PCBs may be present in fluorescent light ballast. The fluorescent lights and ballast will be removed and disposed of according to RFETS procedures as required.

3.1.8 Excess Chemicals

Although there were hazardous chemicals in the T690 Cluster facilities, all excess and hazardous chemicals have been removed from the T690 Cluster facilities during the deactivation process with the exception of some paints and cleaning solvents, which will be disposed of by the subcontractor. Because the chemicals have been removed and there are no known areas which have a buildup of chemical residue, no special chemical characterization is anticipated. Should a chemical be found during the decommissioning process, the chemical will be handled in accordance with existing chemical identification and handling procedures. There are no RCRA units associated with this project, therefore; no closure plans are required.

4.0 ASSESSMENT

The assessment stage of the T690 Cluster data life cycle will include an evaluation of data and any conclusions that may be drawn from the data. The information collected will be detailed in the characterization report.

4.1 DATA EVALUATION

The data will be evaluated for completeness and adherence to the appropriate protocols.

5.0 REFERENCES

DOE/EM-0142P - Decommissioning Handbook

Decommissioning Characterization Protocols (June, 1997) (Draft)

MARSSIM - Multi-Agency Radiation Survey and Site Investigation Manual (Draft)

NUREG/CR5849 - Manual for Conducting Radiological Surveys in Support of License Termination (Draft)

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Item/Area Description	Radiological Survey		Scan Survey	Special Instructions
	# of Alpha/Beta Swipes	# of Direct Alpha/Beta Measurements		
T-690A	10 biased measurements on floor surfaces	10 biased measurements on floor surfaces	N/A	Obtain biased measurements on interior floor surfaces of the trailer(s).
T-690B	10 biased measurements on floor surfaces	10 biased measurements on floor surfaces	N/A	Obtain biased measurements on interior floor surfaces of the trailer(s).
T-690C	5 biased measurements on floor surfaces	5 biased measurements on floor surfaces	N/A	Obtain biased measurements on interior floor surfaces of the trailer(s).
T-690D	5 biased measurements on floor surfaces	5 biased measurements on floor surfaces	N/A	Obtain biased measurements on interior floor surfaces of the trailer(s).
T-690E	5 biased measurements on floor surfaces	5 biased measurements on floor surfaces	N/A	Obtain biased measurements on interior floor surfaces of the trailer(s).
T-690F	5 biased measurements on floor surfaces	5 biased measurements on floor surfaces	N/A	Obtain biased measurements on interior floor surfaces of the trailer(s).
T-690G	5 biased measurements on floor surfaces	5 biased measurements on floor surfaces	N/A	Obtain biased measurements on interior floor surfaces of the trailer(s).
T-690H	5 biased measurements on floor surfaces	5 biased measurements on floor surfaces	N/A	Obtain biased measurements on interior floor surfaces of the trailer(s).
T-690K	5 biased measurements on floor surfaces	5 biased measurements on floor surfaces	N/A	Obtain biased measurements on interior floor surfaces of the trailer(s).
T-690L	5 biased measurements on floor surfaces	5 biased measurements on floor surfaces	N/A	Obtain biased measurements on interior floor surfaces of the trailer(s).
T-690M	5 biased measurements on floor surfaces	5 biased measurements on floor surfaces	N/A	Obtain biased measurements on interior floor surfaces of the trailer(s).
T-3710	5 biased measurements on floor surfaces	5 biased measurements on floor surfaces	N/A	Obtain biased measurements on interior floor surfaces of the trailer(s).
T-444A	5 biased measurements on floor surfaces	5 biased measurements on floor surfaces	N/A	Obtain biased measurements on interior floor surfaces of the trailer(s).

¹ See attached map of building layout
² Surveys to be performed in accordance with 4-K62-ROI-03 01, "Performance of Surface Contamination Surveys" Other radiological references are 1-P73-HSP.
³ Surveys to be performed in accordance with 4-K62-ROI-03 02, "Radiological Requirements for Unrestricted Release", and
⁴ S13-ROI-03 02, "Radiological Requirements for Unrestricted Release".
⁵ 8 10, "Radioactive Material Transfer and Unrestricted Release of Property and Waste".
⁶ 4-N83-REP-1108, "Radioactive Material Management Area (RMMA) Determination".

REVIEW AND APPROVAL	
Prepared By	Date
<i>[Signature]</i>	6/15/97
Reviewed By	Date
<i>[Signature]</i>	6/19/97

**APPENDIX B
RADIOLOGICAL INSTRUMENTATION**

Instrument	Count Type	Allowable Background Counts	Acceptable Application	MDA (dpm/100 cm²)
Bicron w/ A100 Probe	60 sec. (alpha)	2	Direct Alpha Surveys	55
Bicron w/ B50 Probe	60 sec. (beta)	250	Direct Beta Surveys	610
NE Electra W/ DP6 Probe	60 sec. (alpha)	2	Direct Alpha Surveys	60
	60 sec. (beta)	700	Direct Beta Surveys	455
Eberline SAC-4	60 sec. (alpha)	1	Removable Alpha Swipes	18
Eberline BC-4	60 sec. (beta)	200	Removable Beta Swipes	205
LB-5100LW	60 sec. (alpha)	0.5	Simultaneous Removable Alpha and Beta Swipes	20
	60 sec. (beta)	4		35